

## CLAIMS

1. A multicrystalline silicon substrate comprising:
  - a substrate of multicrystalline silicon having relatively large irregularities formed on a surface thereof
  - 5 by etching with an alkaline aqueous solution; and
  - a multiplicity of relatively fine textures formed by dry etching over the relatively large irregularities,

wherein a ratio r expressed as  $r=a/b$ , which is the ratio between the length a of a virtual line connecting individual

10 peaks of the relatively fine textures at a vertical cross section thereof and the length b of a straight line connecting the endpoints of the virtual line, is equal to or larger than 1 and smaller than 1.1.
- 15 2. The multicrystalline silicon substrate according to claim 1, wherein the fine textures have a height and a width of  $2\mu m$  or less, respectively.
3. The multicrystalline silicon substrate according to  
20 claim 1, wherein the fine textures have a height and a width of  $1\mu m$  or less, respectively.
4. The multicrystalline silicon substrate according to  
claim 1, wherein the fine textures have a height-to-width  
25 aspect ratio (height/width) of 2 or less.

5. A process for roughening a surface of a multicrystalline silicon substrate comprising the steps of:

etching a surface of a multicrystalline silicon substrate with an alkaline aqueous solution for forming relatively large textures having a surface area-to-planar surface area ratio R of larger than 1 and smaller than 1.1; and

a dry etching step for forming a multiplicity of relatively fine textures over the relatively large irregularities.

6. The process for roughening a surface of a multicrystalline silicon substrate according to claim

5, wherein in the step of forming a multiplicity of relatively fine textures, a ratio r expressed as  $r=a/b$ , which is the ratio between the length a of a virtual line connecting individual peaks of the relatively fine textures at a vertical cross section thereof and the length b of a straight line connecting the endpoints of the virtual line, is equal to or larger than 1 and smaller than 1.1.